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What is claimed:

1. A method of producing phytase in yeast comprising: providing a heterologous polynucleotide from a non-yeast organism which encodes a protein or polypeptide comprising a phytase from *Escherichia coli*; expressing the polynucleotide in a yeast; and isolating the expressed protein or polypeptide, wherein said protein or polypeptide catalyzes the release of phosphate from phytate and has increased thermostability as compared to that of said protein or polypeptide expressed in a non-yeast host cell.
2. The method according to claim 1, wherein the yeast is selected from the group consisting of *Saccharomyces* species, *Pichia* species, *Kluyveromyces* species, *Hansenula* species, *Candida* species, *Torulaspora* species, and *Schizosaccharomyces* species.
3. The method according to claim 2, wherein the yeast is *Pichia*.
4. The method according to claim 1, wherein the protein or polypeptide has an optimal phytase activity at a pH of less than about 4.
5. The method according to claim 1, wherein the protein or polypeptide preceded by a signal peptide is secreted by the yeast into a growth medium or is not secreted.
6. The method according to claim 5, wherein the protein or polypeptide is secreted by the yeast into the growth medium and has a concentration greater than 300 units per milliliter of the growth medium.
7. The method according to claim 1, wherein the heterologous polynucleotide which encodes the protein or polypeptide is spliced in frame with a transcriptional enhancer element.
8. The method according to claim 1, wherein the heterologous polynucleotide is carried on a vector for stable transformation.
9. The method according to claim 1, wherein the heterologous polynucleotide is carried on an artificial chromosome.
10. The method according to claim 1, wherein the heterologous polynucleotide is integrated into a chromosome of the yeast.
11. A yeast strain comprising: a heterologous polynucleotide from a non-yeast organism which encodes a phytase from *Escherichia coli* and is functionally linked to a promoter, wherein the phytase catalyzes the release of phosphate from phytate and has increased thermostability as compared to a phytase expressed in a non-yeast host cell.
12. The yeast strain according to claim 11, wherein the yeast is selected from the group consisting of *Saccharomyces* species, *Pichia* species, *Kluyveromyces* species,

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Hansenula species, *Candida* species, *Torulaspora* species, and *Schizosaccharomyces* species.

13. The yeast strain according to claim 12, wherein the yeast is *Pichia*.
14. The yeast strain according to claim 11, wherein the heterologous polynucleotide which encodes the protein or polypeptide is spliced in frame with a transcriptional enhancer element.
15. The yeast strain according to claim 11, wherein the heterologous polynucleotide is carried on a vector for stable transformation.
16. The yeast strain according to claim 11, wherein the heterologous polynucleotide is carried on an artificial chromosome.
17. The yeast strain according to claim 11, wherein the heterologous polynucleotide is integrated into a chromosome of the yeast.
18. The yeast strain according to claim 11, wherein the protein or polypeptide is preceded by a signal peptide.
19. A vector comprising:
 - a polynucleotide from a non-yeast organism which encodes a protein or polypeptide comprising a phytase from *Escherichia coli*;
 - a promoter functionally linked to the polynucleotide encoding the protein or polynucleotide; and
 - an origin of replication to direct replication of the vector in yeast.
20. The vector according to claim 19 further comprising: a selectable marker.
21. The vector according to claim 20, wherein the selectable marker is selected from the group consisting of URA3, LEU2, TRP1, HIS3, HIS4, ARG4, and an antibiotic resistance gene.
22. The vector according to claim 19 further comprising: an origin of replication to direct replication of the vector in a bacterial cell.
23. The vector according to claim 22, wherein the origin of replication is selected from the group consisting of ColE1, Ori, and oriT.
24. The vector according to claim 19, wherein the protein or polypeptide is preceded by a signal peptide.
25. The vector according to claim 19, wherein the polynucleotide which encodes the protein or polypeptide is spliced in frame with a transcriptional enhancer element.
26. Animal feed comprising the phytase made according to the method of claim 1.
27. The animal feed according to claim 26, wherein said phytase from *Escherichia coli* is an AppA phytase.

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